

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. through 3. (cancelled).

4. (currently amended): A radiation image storage panel, comprising
a stimutable phosphor layer capable of emitting light when being exposed to stimulating
rays, which cause the stimutable phosphor layer to emit the light in proportion to an amount of
energy stored on the stimutable phosphor layer during exposure of the stimutable phosphor layer
to radiation;

wherein the stimutable phosphor layer is adapted for radiating out the emitted light with
an intensity distribution that is compressed in a direction, which is normal to a surface of the
stimutable phosphor layer, and into an oblate distribution, which is flatter than a $\cos \Theta$
distribution.~~A radiation image storage panel as defined in Claim 2;~~

wherein the surface of the stimutable phosphor layer on a light radiating side, from which
the emitted light is radiated out, has been subjected to flattening processing for flattening the
surface of the stimutable phosphor layer such that the emitted light is radiated out with the
intensity distribution that is compressed in the direction, which is normal to the surface of the

stimulable phosphor layer, and into the oblate distribution, which is flatter than the $\cos \Theta$ distribution; and

wherein the flattening processing is a processing for filling a material, which has a refractive index larger than 1, into depressed regions of the surface of the stimulable phosphor layer on the light radiating side and thereby flattening the stimulable phosphor layer.

5. (original): A radiation image storage panel as defined in Claim 4 wherein the material, which has a refractive index larger than 1, is a high-molecular weight material.

6. (original): A radiation image storage panel as defined in Claim 4 wherein the material, which has a refractive index larger than 1, is a stimulable phosphor.

7. (new): A radiation image storage panel, comprising:

a stimulable phosphor layer, which emits light when exposed to stimulating rays;

wherein the stimulable phosphor layer radiates the emitted light with an intensity distribution that is compressed in a direction normal to a surface of the stimulable phosphor layer, and into an oblate distribution, which is flatter than a $\cos \Theta$ distribution;

wherein the surface of the stimuable phosphor layer on a side from which the emitted light is radiated out is flattened; and

wherein a filling material having a refractive index larger than 1 is deposited into depressed regions of the surface of the stimuable phosphor layers on the flattened side.

8. (new): The radiation image storing panel according to claim 7, wherein the filling material is a high-molecular weight material.

9. (new): The radiation image storing panel according to claim 7, wherein the filling material is a stimuable phosphor.